

***NEPENTHES SIBUYANENSIS*,**
A NEW *NEPENTHES* FROM SIBUYAN,
A REMOTE ISLAND OF THE PHILIPPINES

Dr. Joachim Nerz
Arndtstr. 2
71032 Böblingen
Germany

Phill Mann
P.O. Box 193
Harvey 6220
Western Australia

Thomas Alt
Waldstr. 12
66822 Lebach-Aschbach
Germany

Trend Smith
Tampingo Street 30
Lorenzo Village
Makati, Manila
Philippines

Keywords: new taxa: *Nepenthes sibuyanensis*.

Received: 11 July 1997

Summary

A new species of *Nepenthes* from Mt. Guintguintin on Sibuyan Island, Philippines is described and illustrated.

Introduction

In September 1996, Thomas Alt, Phill Mann, Trend Smith and Alfred Öhm started an expedition to some Philippine islands in search for Nepenthaceae. One of these was Sibuyan Island; it belongs to a group of small isolated islands located between the Northern islands of Luzon/Mindoro and the Southern islands of Cebu. At the centre of Sibuyan Island there is a high mountain named Mt. Guintguintin with an altitude of 2057 m. Here three species of Nepenthaceae have been found. One of them, *Nepenthes sibuyanensis*, will be described in this paper; another one (*N. argentea*) was described recently (Jebb & Cheek, 1997).

Nepenthes sibuyanensis Nerz sp. nov.

Folia mediocria sessilia, lamina lineari-lanceolata, nervis longitudinalibus utrinque 5-6, basi in alas 2 decurrente, vagina 0.; ascidia mediocria v. maiora, ovata v. infundibuliformia, costis 2 prominentibus, nonnunquam ad os rudimento alae ciliatae ornatis; peristomio operculum versus acuminato in collum breve elongato, applanato, 20 mm lato, costis 1.5 - 2 mm distantibus, dentibus 5 x longioribus quam latis. Operculo ovato-cordato, facie inferiore plano; inflorescentia racemus parvus pedicellis 8 mm longis, omnibus 1-floris; indumentum in partibus vegetativis subnullum, in inflorescentiis densum adpressum, e pilis simplicibus compositum.

Holotypus: P. Mann & T. Smith, Mt. Guintguintin, Sibuyan island, Philippines, 1300 m above sea level, growing between *Dipteris* and high grasses on open slopes, 5/10/1996, 051001(L)¹

Stems short, up to 0.7 m long, the part with adult leaves about 8 mm in diameter, cylindrical to asymmetrical in cross-section, the internodes 1-1.5 cm long. Leaves thin-coriaceous, sessile, linear-lanceolate or slightly spatulate, broadest little above the middle, 10 to 15 cm long, 3-3.5 cm broad, acute, gradually attenuate to the base, decurrent into 2 attenuate wings on two angles of the stem over 2/3 to nearly the whole internode. Longitudinal nerves 5 to 6 on each side, originating in the basal part of the midrib, running parallel in the outer half of the leaf; tendrils 1 to 2 times as long as the pitcher, about

¹The sheet 051001 (L) contains a typical pitcher of *Nepenthes sibuyanensis*; this material was chosen as holotype because the pitcher of *Nepenthes sibuyanensis* is the most characteristic organ of this species.

2 to 3 mm thick near the leaf, 7 to 9 mm near the pitcher. Pitchers incurved from the hanging end of the tendril, the curve is tightly appressed to the pitchers; pitchers ovate to infundibuliform, 20 cm high, 12 cm wide in the widest part beneath the mouth, with two prominent ribs over the whole length, with 2 scarcely fringed wings in the upper 2/3 of the pitcher, 2 to 3 mm broad. Mouth oval, almost horizontal to slightly oblique, usually elongated into a short neck. Peristome cylindrical, 20 mm broad, the ribs 2 mm apart, 1 mm high, the teeth of the inner margin about 3 to 4 mm long, up to 5 times as long as broad. The whole inner surface of the pitcher is glandular. Glands at the bottom of the pitcher are approximately 500 cm^{-2} , overarched, about 0.1 to 0.2 mm in diameter, below the rim 200-250 cm^{-2} , about 0.5 to 0.8 mm in diameter, not overarched; lid broadly ovate-cordate, 8 cm long, 6.5 cm broad, rounded at the apex, usually slightly cordate, without appendages, small compared with size of mouth; glands ovate, deepened, 1 mm in diameter, concentrated at the central part; only few, scattered. Midrib of the lid prominent at the basal half, branching at the apical end into 2 to 3 longitudinal nerves. Longitudinal nerves 5 to 6 on each side, originating in the basal part of the lid, branched at the end. Spur filiform, 2-3 mm long, 0.5 mm in diameter, insertion at the base of the lid. *Male inflorescence* a raceme, the peduncle at least 18 cm long, 6 mm thick at the base, the axis 15 cm long, the pedicels all of them 1-flowered, with no or much reduced bract, the lower ones 12-14 mm long, the upper ones little shorter. Tepals oblong, about 3 mm long, obtuse. Staminal column about 5 mm long, the anthers inclusive. Anthers uniseriate. Fruit 18 to 22 mm long, the valves lanceolate, 3 to 4 mm broad. Seeds filiform, 8 mm long. *Indumentum*: In the vegetative parts almost none, the inflorescence very densely and adpressed stellate-hairy, staminal column sparsely covered with short hairs. *Colour* of herbarium specimens light brown to reddish, pitchers light brown to reddish, rim dark brown, pitchers with few reddish spots in the upper part, 5 to 10 mm in diameter. Interior of the pitcher shiny brown. *Colour* of living specimen: Leaves yellowish to dark green, midrib light green; pitchers yellowish to orange, sometimes with some few scattered red spots beneath the mouth, 5 to 10 mm in diameter, rim dark red to black, lid yellowish to orange (Figure 1, page 22; Figure 2, page 23).

Distribution and Ecology

Nepenthes sibuyanensis is known only from its type locality at Mt. Guintguintin, Sibuyan Island; here it grows quite sparsely on open grassy slopes among *Dipteris conjugata* and high grasses; small shrubs also grow in the same area. It occurs at altitudes from 1500 to 1800 m. Characteristically the pitchers are hidden in the ground; the pitchers are of pale yellow to slightly reddish colour with some red spots. The rim is usually dark red to blackish. The only pitcher which has been found growing in the sun was orange to reddish with a shiny red rim. At Mt. Guintguintin two more species of *Nepenthes* have been found, one grows in abundance at lower altitudes (800-1000 m) in bushes and seems to be closely related to *N. alata*. The other one is a small new species which has been found at about 1800 m above sea level on steep slopes in open places. Very few specimens of it have been found. This species has been described recently as *Nepenthes argentei* (Jebb & Cheek, 1997, pp. 19-22). A range map is included in Figure 3, page 23.

Systematic Links

The characteristics of *Nepenthes sibuyanensis* show it to be a member of the group *Insignes*, to which belong *Nepenthes merrilliana* Macfarl., *Nepenthes insignis* Danser, *Nepenthes burkei* Masters and *Nepenthes ventricosa* Blanco. These species seem to be the nearest relatives of *Nepenthes sibuyanensis*. It is remarkable that *Nepenthes sibuyanensis* shows morphologic features which are intermediate especially between *Nepenthes merrilliana* Macfarl. and *Nepenthes ventricosa* Blanco. Also geographically, *Nepenthes sibuyanensis* is situated between these two species. *Nepenthes merrilliana* Macfarl. is only known from Mindanao, an island located South of Sibuyan, and *Nepenthes ventricosa* Blanco is just known from Luzon, North of Sibuyan. Maybe *Nepenthes sibuyanensis* is a species intermediate between *Nepenthes merrilliana* Macfarl. and *Nepenthes ventricosa* Blanco.

Characteristics	<i>Nepenthes sibuyanensis</i>	<i>Nepenthes merrilliana</i>	<i>Nepenthes insignis</i>	<i>Nepenthes burkei</i>	<i>Nepenthes ventricosa</i>
teeth of interior margin of rim	distinct teeth, 5 times aa long as broad, 5 mm long	teeth of interior margin of rim as long as broad, small, 1 mm long	teeth of interior margin of rim as long as broad, small, 1 mm long	teeth of interior margin of rim aa long as broad, small, about 0.5 to 1mm long	teeth of interior margin of rim 2 to 3 times aa long as broad, 1 to 2 mm long
rim	with distinct, 1 mm deep ribs, 2 mm apart	ribs 0.5 to 1 mm apart	ribs 0.5 to 1 mm apart	ribs 0.5 to 1 mm apart	ribs 0.5 to 1 mm apart
neck of rim	borders of rim close together at neck, with a distinct neck	borders of rim do not fit together at the upper end near the lid, leaving a distinct gap	rim towards the lid without neck	rim towards the lid with a slightly developed neck	rim towards the lid without or with slightly developed neck
wings	pitchers without or just slightly developed wings in the upper half of the pitcher	lower pitchers with well developed, fringed wings	lower pitchers rarely with 2 narrow wings	lower pitchers without or just slightly developed wings in the beyond the rim	lower pitchers without wings
shape of lower pitchers	ovate to slightly infundibulate	ovate	ovate in the lower half, cylindric in the upper half	ventricose below, slightly constricted in the middle	slightly ventricose below, constricted in the middle
lid	broadly ovate-cordate, 8 cm long, 6.5 cm broad, glands at the lower surface rather large, concentrated at the central part of the lid, few, scattered	ovate, 12 to 14 cm long, 5 to 6 cm broad, few minute glands at the lower surface	orbiculate to ovate, up to 5 cm long, up to 4.5 cm broad, many glands at the lower surface, rather large, aggregated near the 2 main lateral nerves, missing in the median and lateral part	ovate-cordate, 5 to 8 cm long, 3 to 5 cm broad, few glands at the lower surface, aggregated near the lateral nerves	ovate-cordate, 3 to 4 cm long, 2 to 3 cm broad, small compared with the size of mouth/few glands at the lower surface, aggregated near the lateral nerves
insertion of mouth	almost horizontal	distinct oblique	slightly oblique	slightly oblique	almost horizontal
size of pitchers	up to 26 cm	up to 30 cm	20 to 35 cm	15-20 cm	10-15 cm
male inflorescence	1-flowered	2-flowered	2-flowered	1-flowered	1-flowered
growth form	in grassy area, plants short, 0.5-0.7 m, no climbing plants known	sometimes climbing up to several meters in shrubs	frequently epiphytic on trees, shortly climbing	unknown	climbing in shrubs, up to 2 m

Table 1: Species that seem to be closely related to *Nepenthes sibuyanensis* are compared. Characteristics clearly distinguishing *Nepenthes sibuyanensis* from *Nepenthes merrilliana*, *Nepenthes insignis*, *Nepenthes burkei*, and *Nepenthes ventricosa* are shown.

Specimens Examined

Nepenthes sibuyanensis: P. Mann & T. Smith, pitcher, Mt. Guintguintin, Sibuyan island, Philippines, 1300 m above sea level, growing between *Dipteris* sp. and high grasses on open slopes, 5/10/1996, 051001(L-holotype); P. Mann & T. Smith, Mt. Guintguintin, vegetative part without pitchers, Sibuyan island, Philippines, 1300 m above sea level, 5/10/1996, 051002 (L); P. Mann & T. Smith, Mt. Guintguintin, fruit, Sibuyan island, Philippines, 1300 m above sea level, 5/10/1996, 051003 (L); P. Mann & T. Smith, Mt. Guintguintin, male flower, Sibuyan island, Philippines, 1300 m above sea level, 5/10/1996, 051004 (L).

Nepenthes merrilliana: D. Mendosa & P. Convocar, Mt. Kabatuan, Surigao Province, April 1919, 10523 (MAN); M. Ramos & J. Pascasio, Surigao Province, Mindanao, 34503 (BO).

Nepenthes insignis: Brass, 4 km SW of Bernhard Camp, Idenburg Rivier, 3/1939, 13379 (BO); 8 km SW of Bernhard Camp, Idenburg Rivier, 3/1939, 13669 (BO); Docters van Leeuwen, border of affluent C of the Rouffaer River, 250 m, 9/1926, 10258 (BO-type), Docters van Leeuwen, Rouffaer River, 9/1926, 10286 (BO), Pulle 277, Border of the Beaufort River, 80 m, 9/11/1912, 201110 (L).

Nepenthes ventricosa: H. C. Conklin & Buwaya, Bayninan, Banaue, Ifugao, Mt. Province, Luzon, 5000 ft. above sea level, 29/3/1963, 79644 (L); G. E. Edano, Mt. Magnas, Apayao Subprovince, Luzon, June 1953, 19754 (MAN); D. R. Mendosa, Sumigar, Banaue, Ifugao, forest slope or open and on road cuts, 17/5/1967, 97469 (MAN).

Nepenthes burkei: G. E. Edano, Mt. Halcon, Mindoro, summit 2828 m, 15/2/1948, 3375 (MAN); C. E. Ridsdale, M. J. E. Coode, E. Reynoso, N-coast Mindoro, Subaan River headwaters, inland from San Teodoro, mossy forest on ridge, 920 m, 2/5/1986, 5689 (K).

Besides the study of herbarium material we had also the opportunity to examine living plants of *Nepenthes merrilliana* at its natural habitat at 'Red Hill', Mindanao and to examine living cultivated material of *Nepenthes ventricosa* and *Nepenthes burkei* in several Botanic Gardens and private collections.

Acknowledgments

We would like to thank Heiko Rischer and Andreas Wistuba for helpful general discussions and Matthias Schmidt for preparing the illustrations.

References:

- Blanco, F. M. 1837, *Nepenthes*, Flora de Filipinas, 1, ed., pp. 805-809.
- Danser, B.H. 1928, The Nepenthaceae of Netherlands Indies, Bull. Jard. Bot. Buitenzorg, 3. Ser. 9 (Livr. 3-4).
- Jebb, M. & M. Cheek 1997, A Skeletal Revision of *Nepenthes* (Nepenthaceae), Blumea, 42, 1-106.
- Macfarlane, J.M. 1927, The Philippine Species of *Nepenthes*, The Philippine Journal of Science, 33 (2), 127-140.
- Macfarlane, J.M. 1911, New Species of *Nepenthes*, Contributions from the Botanical Laboratory of the University of Pennsylvania, 3 (3), 207 ff.
- Masters, M.T. 1889, New or Noteworthy Plants, The Gardeners' Chronicle, 3. ser. 6, 492.

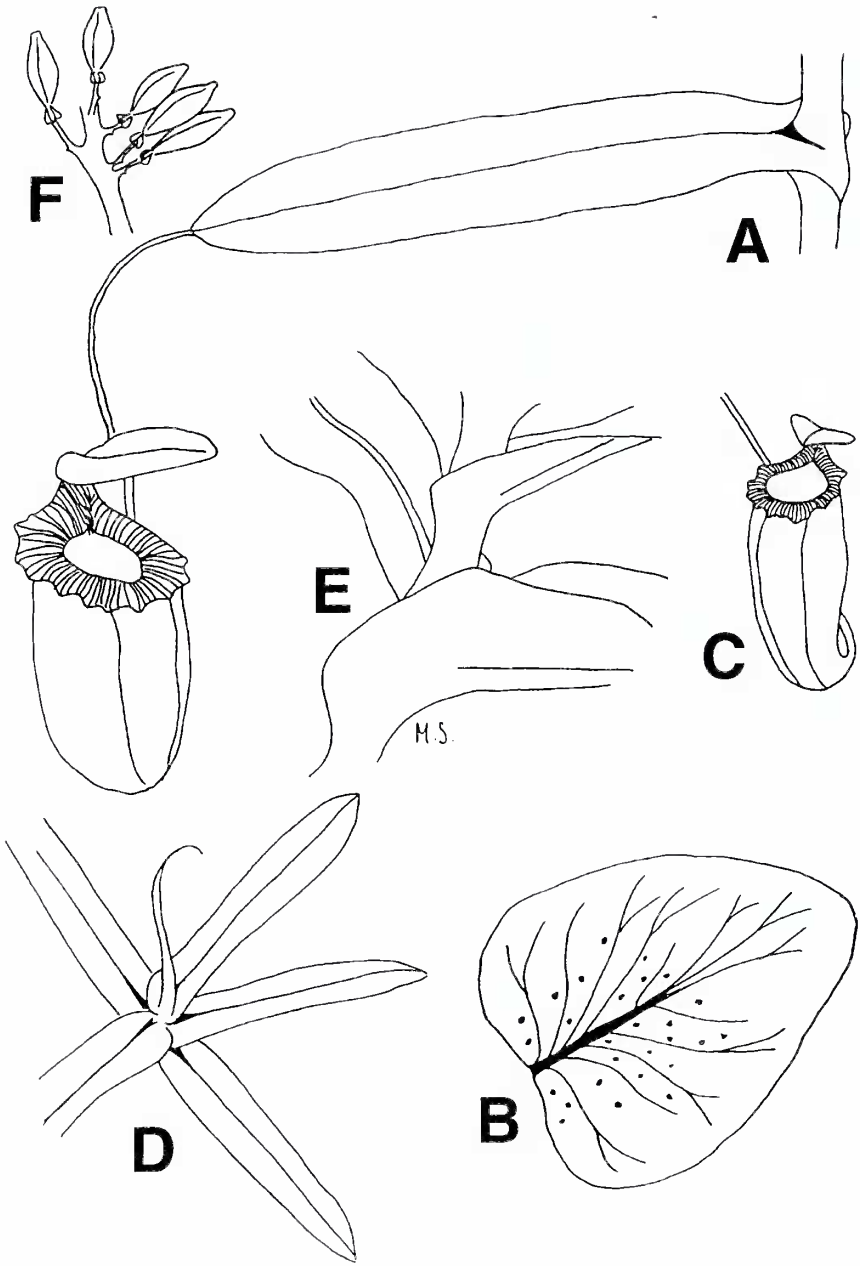


Figure 1: *Nepenthes sibuyanensis*. A. leaf with typical pitcher. B. lower surface of lid. C. pitcher from a sunny position. D. typical rosette. E. stem with insertion of leaf. F. ripe capsules.



Figure 2: *Nepenthes sibuyanensis*

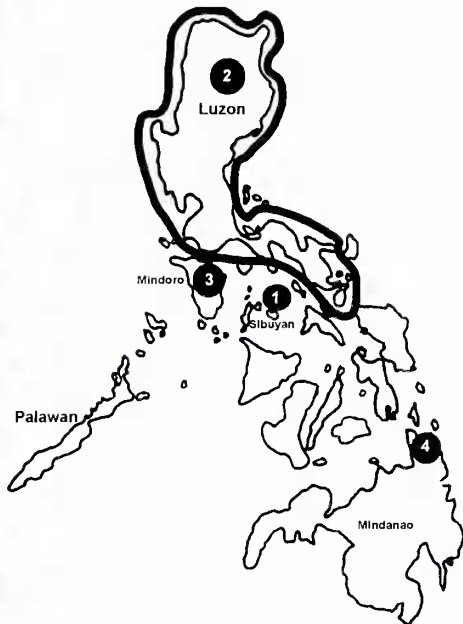
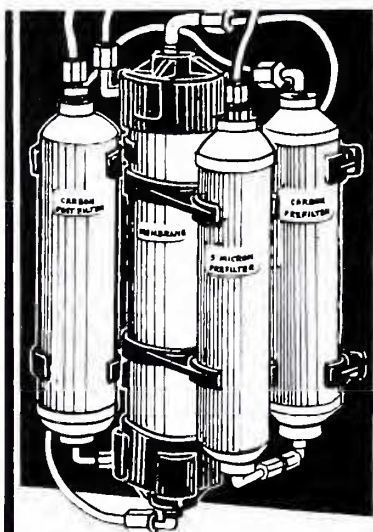


Figure 3: Distribution of *Nepenthes sibuyanensis*, *Nepenthes merrilliana*, *Nepenthes ventricosa* and *Nepenthes burkei* at the Philippines.



Your Plants Are The Ultimate Water Experts...

You Can Tell When They Are Happy & How They React To Quality Water.

Protect Your Plants and Your Investment... Eliminate harmful chemicals with Nature's Way Reverse Osmosis Purifiers. Remove impurities which cause so many problems. Up to 98% Pure. YOUR PLANTS WILL THANK YOU...

Model BQ-30, 4 Stage R.O. Unit \$144.95

• 30 Gallons Per Day • TFC Membrane

Larger Sizes Available for Nurseries and Greenhouses — Also Catering to the Hobbyist.

For Information and Orders
Call Mon. thru Fri. 8:30 - 5:00
800-780-2320
- Commercial Inquiries Welcome

3 Year Limited Warranty
Shipping and Handling
U.S. \$12.00



Nature's Way

4411 BEE RIDGE ROAD, STE. 195
SARASOTA, FLORIDA 34233
SINCE 1964